

October 2003
FACT SHEET
Navajo Tribal Utility Authority-Kaibeto
NPDES Permit No. AZ0022471

I. Introduction

The Navajo Tribal Utility Authority ("NTUA") was issued an NPDES permit (AZ0022471) on April 17, 1986, for the Kaibeto wastewater treatment lagoons. The permit became effective on May 1, 1986, and expired on December 31, 1990. NTUA applied to U.S. Environmental Protection Agency (EPA) Region 9 for reissuance on December 17, 1990 and June 4, 1992. Pursuant to 40 CFR 122.6, the 1986 permit has been administratively continued pending re-issuance by EPA. NTUA submitted an application for continued coverage of the NPDES permit on July 9, 2003.

Applicant address: Navajo Tribal Utility Authority
P.O. Box 170
Ft. Defiance, AZ 86504

Applicant Contact: Harry Begaye
(520) 729-5721 (ext. 2208)

Facility Contact: Fannie George
(928) 283-5421

II. Background

The NTUA-Kaibeto wastewater treatment lagoons are located in Kaibeto, Coconino County, about 1.5 miles south of Highway 98 in the Northwestern portion of the Navajo Nation, Arizona. The facility serves a population of approximately 1,780, receiving only domestic sewage with a flow of 0.078 million gallons per day (MGD). The treatment plant originally was designed as a three-cell (evaporation ponds) total retention system with 133 connections but an increase in the wastestream volume caused the facility to discharge.

The facility noticeably discharged mainly in the spring and fall seasons. In 1992, the facility was retrofitted with a manual chlorination system. In 1995, the treatment plant was upgraded to a five-cell system. The wastewater from the collection system flows by gravity to a distribution box which directs flow to Cell #1. Transfer piping allows wastewater to flow in succession from Cell #1 to Cells #2, #3, #4a, and finally #4b. An additional 4.6-acre cell is being proposed to increase capacity to 0.19 MGD by November 2003. There is no pretreatment of wastewater flows at this facility. Effluent will be intermittently discharged from Cell #4b when the ponds exceed capacity through a 12-inch pipe to Outfall No. 1. Although the cells are used for natural die-off of fecal coliform bacteria, effluent will

receive chlorination prior to discharging at Outfall No. 001. A discharge from Outfall No. 001 would flow to an unnamed ephemeral wash, a tributary to ephemeral Kaibeto Creek, an eventual tributary to the Colorado River (Lower Lake Powell). Any sampling and monitoring under the proposed permit shall be performed at Outfall No. 001.

EPA has determined that there are no threatened or endangered species of concern in the discharge area so no requirements specific to the protection of endangered species are in the proposed permit. A copy of the permit and fact sheet is being sent to the U.S. Fish and Wildlife Service for review during the public comment period.

III. Water Quality Standards and Boundaries

Pursuant to the Water Quality Act of 1987 and the "EPA Policy for the Administration of Environmental Programs on Indian Reservations" (November 8, 1987), EPA will work directly with Indian Tribal governments on a one-to-one basis. This conforms with the Federal Indian Policy of January 24, 1983. The Navajo Nation has received Treatment as a State ("TAS") for Section 106 of the Clean Water Act ("CWA".) They have applied but have not received TAS for the purposes of Section 303 of the CWA. Section 106 grant money was used to develop water quality standards and use designations, which must be approved under Section 303 by EPA Region 9. The Navajo Nation completed and adopted the Navajo Nation Surface Water Quality Standards ("NNSWQS") in September 1999 and promulgated in November 1999. The NNSWQS, along with a TAS application under Section 303, was submitted to EPA in November 1999. A draft revision to the NNSWQS made on April 17, 2003 is awaiting review and approval by the Navajo Nation Council. In the interim until the NNSWQS are approved by EPA, those water quality standards will be used on a best professional judgment basis for purposes of developing water quality based effluent limitations.

IV. Basis of Proposed Permit Requirements

The proposed discharge limitations are based upon:

- A. Secondary Treatment Regulations contained in 40 CFR Part 133, Sections 133.101 through 133.105, promulgated September 20, 1984, and most recently amended on January 27, 1989.
- B. NNSWQS, which was promulgated by the Navajo Nation Council in November 1999.

V. Designated Uses of the Receiving Water

The designated uses of the receiving water (Kaibeto Creek, Colorado River, Lower Lake Powell), as defined by the NNSWQS, are primary and secondary human contact, warm water habitat, ephemeral warm water habitat, and livestock watering (Table 204.1, page 17.)

VI. Determination of Effluent Limitations, Monitoring and Reporting Requirements

A. Flow Rates

Under the proposed permit, there is no flow limit but the monthly and daily maximum flows of both the influent and effluent must be monitored and reported. The monitoring frequency is once/week. The previous permit had flow limits of 0.1 million gallons per day (MGD) as a 30-day average and 0.2 MGD as a daily maximum. The treatment plant has been modified to expand retention capacity rendering the need for flow limits, and a basis to delete the previous limitation (40 CFR 122.44(e) and 122.62(a)(1)).

B. Five-Day Biochemical Oxygen Demand (BOD₅)

Under the proposed permit, the discharge shall not exceed a monthly average of 45 mg/l and a weekly average of 65 mg/l, and shall achieve no less than a monthly average rate of 65% removal. These limits are required under 40 CFR Section 133.105(a) and 133.115(d). The limits are designated as 30-day and 7-day averages since the facility operates similarly to a POTW [40 CFR 122.45(d)]. These limits are the same as those in the previous permit.

Under 40 CFR Section 122.45(f), mass limits are required for BOD₅. Based upon the 0.087 MGD flow, the mass limits for BOD₅ are based on the following calculations:

Monthly average

$$\frac{0.087 \text{ MG}}{\text{day}} \times \frac{45 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 14.7 \text{ kg/day}$$

Weekly average

$$\frac{0.087 \text{ MG}}{\text{day}} \times \frac{65 \text{ mg}}{1} \times \frac{8.345 \text{ lb/MG}}{1 \text{ mg/l}} \times \frac{0.45 \text{ kg}}{\text{lb}} = 21.2 \text{ kg/day}$$

The monitoring frequency is once/week.

C. Total Suspended Solids (TSS)

Under the proposed permit, the discharge shall not exceed a weekly average of 135 mg/l and monthly average of 90 mg/l TSS, and shall achieve no less than a monthly average rate of 65% removal. These limitations (Alternative State Requirements) are Best Professional Judgement technology-based limits and consistent with 40 CFR Sections 133.105(b)(3) and (d). Mass limit requirements in accordance with 40 CFR 122.45(f) have also been set in the proposed permit. Mass loadings are based upon the same calculation shown above for BOD₅ and shall not exceed a 7-day average of 44.0 kg/day and a monthly average of 29.0 kg/day for TSS. The monitoring frequency is once/week.

D. Fecal Coliform

In the proposed permit, the monthly logarithmic mean of fecal bacteria shall not exceed 100/100 ml as a geometric average of samples collected during the calendar month, and 200/100 ml as a single sample maximum. These limits are more stringent than those in the previous permit and are based on the Navajo Nation water surface quality standards for primary human contact (Table 206A.1, page 24.) The monitoring frequency is once/week.

E. Total Residual Chlorine (TRC)

The permit requires the discharger to meet a TRC limit of 1.0 mg/l as an instantaneous maximum if chlorination is used for disinfection of the effluent before discharge. This limit is based on Best Professional Judgement. The limit should assure that the Navajo Nation surface water quality standard for protection of aquatic life (0.011 mg/l, Table 206B.2, page 28) is met in the receiving water when aquatic life is present. The presence of aquatic life depends on natural background flows. Such background flows are only present during and after storm events. Consequently, at these times the discharge will undergo significant dilution. Furthermore, a large portion of the residual chlorine will like volatilize. Even so, the permittee should attempt to achieve the lowest possible residual chlorine level while still achieving the limits for fecal coliform. The monitoring frequency is once/week for the effluent and for the receiving water.

F. Total Dissolved Solids (TDS)

The proposed permit requires monitoring and reporting of both the influent and effluent TDS, as in the previous permit. The monitored frequency is once/quarter. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary.

G. Ammonia (as un-ionized NH₃)

The proposed permit establishes a monitoring requirement for ammonia. The monitoring frequency is once/quarter. If analytical results for the first four quarters reveal ammonia

levels are below the EPA's National Water Quality Criteria for ammonia, the monitoring frequency will decrease to once/year. The regulations at 40 CFR 122.44(i) allow requirements for monitoring as determined to be necessary. If analytical results for the first four quarters reveal ammonia levels are below for ammonia, the monitoring frequency will decrease to once/year.

H. pH

The proposed permit requires that effluent pH not fall below 6.5 or above 9.0 standard pH units, based on the Navajo Nation numeric water quality standards for aquatic, wildlife and livestock for warm water habitat (Table 206B.1, page 28.) This limit is consistent with that in the previous permit. The monitoring frequency is once/week.

VII. Reporting

The proposed permit requires discharge data obtained during the previous three months to be summarized and reported monthly. If there is no discharge for the month, indicate "Zero Discharge". These reports are due January 28, April 28, July 28, and October 28 of each year. Duplicate signed copies of these, and all other reports required herein, shall be submitted to the EPA Regional Administrator and the Navajo Nation EPA.

VIII. General Standards

The proposed permit sets general standards that are narrative water quality standards contained in the Navajo Nation Surface Water Quality Standards, Section 203. These general standards are set forth in Section B. (General Discharge Specifications) of the permit.

IX. Permit Reopener

At this time, there is no reasonable potential to establish any other water quality-based limits. Should any monitoring indicate that the discharge causes, has the reasonable potential to cause, or contributes to excursion above a water quality criteria, the permit may be reopened for the imposition of water quality-based limits and/or whole effluent toxicity limits. The proposed permit may be modified, in accordance with the requirements set forth at 40 CFR 122.44 and 124.14, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any EPA-approved new Tribal water quality standards.

X. Biosolids Requirements

The permittee shall submit a report 60 days prior to disposal of biosolids. The report shall discuss the quantity of biosolids produced, the treatment applied to biosolids including process parameters, disposal methods, and, if land applied, analyses for Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Molybdenum, Nickel, Zinc, and Selenium, and for

organic-N, ammonium-N, and nitrate-N, all expressed in mg/kg biosolids on a 100% dry weight basis. The permittee shall comply with all standards for biosolids use and disposal of Section 405(d) of the CWA, and 40 CFR Parts 257, 258 and 503.

XI. Endangered Species Act

EPA has determined that discharge in compliance with this permit will have no effect on threatened or endangered species.

XII. Written Comments

Persons who wish to comment upon, object to the proposed action, or request a public hearing pursuant to 40 CFR Section 124.11 should submit their comments and requests in writing within thirty (30) days from the date of the Public Notice, either in person or by mail to:

U.S. Environmental Protection Agency, Region IX
CWA Standards and Permits Office (WTR-5)
Attn: Linh Tran
75 Hawthorne Street
San Francisco, CA 94105
Telephone: (415) 972-3511

XIII. Information and Copying

The Administrative Record, which contains the draft NPDES permit, the fact sheet, comments received, and other relevant documents, is available for review and may be obtained by calling or writing to the above address.

All comments or objections received within thirty (30) days from the date of the Public Notice, will be retained and considered in the formulation of the final determination regarding the permit issuance.

XIV. Public Hearing

When public interest warrants, the Regional Administrator shall hold a public hearing and such notice of hearing shall be issued by public notice at least thirty (30) days prior to the hearing date. A request for a public hearing must be in writing and must also state the nature of the issue proposed to be raised in the hearing.